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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,741	03/23/2007	Toshitaka Funazukuri	0234-0515PUS1	8885
2292 7590 08/04/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER BLAND, LAYLA D				
ART UNIT 1623		PAPER NUMBER		
NOTIFICATION DATE 08/04/2008		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

# Office Action Summary

**Application No.**

10/579,741

**Applicant(s)**

FUNAZUKURI ET AL.

**Examiner**

LAYLA BLAND

**Art Unit**

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This office action is a response to Applicant's amendment submitted April 14, 2008, wherein claims 1, 3, 4, and 5 are amended and new claim 7 is added.

#### ***Priority***

This application is a national stage entry of International Application No. PCT/JP04/17638, filed November 19, 2004, which claims priority to Japanese Application No. 2003-393118, filed November 21, 2003. In view of Applicant's remarks submitted April 14, 2008, the application is given the benefit of priority. It is noted that Japanese application 2003-393118 is in Japanese; no translation of the priority document into English has been provided.

In view of Applicant's amendment submitted April 14, 2008, the rejection of claims 1 and 3-5 under 35 USC 112, second paragraph, as being indefinite are withdrawn.

In view of Applicant's amendment submitted April 14, 2008, the rejection of claims 1-6 under 35 USC 102(b) as being anticipated by Bergfeld are withdrawn. As amended, the claims now require application of pressure from 10-100 MPa and are not anticipated by Bergfeld.

The following new rejections were necessitated by Applicant's amendment submitted April 14, 2008, wherein the scope of the claims was changed such that they are no longer anticipated by Bergfeld, and wherein new claim 7 is added.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Puri et al. (Biotechnology and Bioengineering, vol. XXV, pp. 3149-3161 (1983)).

Puri et al. teach a method wherein lignocellulosic material from bagasse, wheat straw, or eucalyptus was treated at 200°C at 3.45, 6.9, 10.3, or 13.9 MPa, with carbon dioxide added at 4.8 MPa from a cylinder [page 3150, Autohydrolysis-Explosion Pretreatment Method]. The use of carbon dioxide as a digester pressuring gas serves to overcome the low initial reaction rates associated with autohydrolysis [page 3154, second paragraph]. The method of Puri et al. operates at a lower temperature than steam explosion, which is expected to reduce decomposition [page 3154, last paragraph]. Higher partial pressure of carbon dioxide generates more carbonic acid, resulting in increased rates of hydrolysis [page 3158, first full paragraph]. Xylose and glucose were obtained [page 3159, first full paragraph].

***Claim Rejections - 35 USC § 103***

Claims 3 and 5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Puri et al. (Biotechnology and Bioengineering, vol. XXV, pp. 3149-3161 (1983)).

Puri et al. teach as set forth above.

Puri et al. are silent regarding the carbon dioxide content in the liquid phase at the given conditions. This limitation is understood to be a function of the temperature and pressure conditions of the reaction; because Puri et al. teach the same reaction conditions, it is considered likely that the limitations of claims 3 and 5 are also met. Furthermore, it would be obvious to optimize these given the guidance given by Puri et al. to the benefits of using carbon dioxide and rates of hydrolysis as a function of carbonic acid content.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Puri et al. (Biotechnology and Bioengineering, vol. XXV, pp. 3149-3161 (1983)) in view of Synopses of the 34<sup>th</sup> Symposium in Autumn of the Society of Chemical Engineers, Japan, hereafter 34<sup>th</sup> Symposium (PTO-1449 submitted August 18, 2006).

Puri et al. teaches as set forth above.

Puri et al. does not teach hydrolysis of starch, agar, guar gum, glycogen or pectic acid.

34<sup>th</sup> Symposium teaches that pectic acid can be hydrolyzed using pressurized hot water [Experimental Methods].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to hydrolyze pectic acid using the conditions taught by Puri et al. The benefits of using carbon dioxide are taught by Puri et al. and the skilled artisan would expect the same benefits for hydrolysis of pectic acid.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAYLA BLAND whose telephone number is (571)272-9572. The examiner can normally be reached on Tuesday - Friday, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anna Jiang can be reached on (571) 272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shaojia Anna Jiang, Ph.D./  
Supervisory Patent Examiner, Art Unit 1623

/Layla Bland/  
Examiner, Art Unit 1623